

AMENDMENT AND RESPONSE

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Serial No.: 10/056,270

Filing Date: 1/24/2002

Attorney Docket No. 100.323US01

Title: ELECTRICAL NOISE PROTECTION

REMARKS

The Office Action mailed on September 9, 2005 has been reviewed. Claims 1-6, 8-17 and 19-26 are currently pending in this application and claims 8-10, 14, 15, 19-21, 25 and 26 have been withdrawn from consideration.

Rejections Under 35 U.S.C. § 103

Claims 1-4, 6, and 11-13 are rejected under 35 USC § 103(a) as being unpatentable over Akiba et al. (U.S. Patent No. 6,353,540) in view of Sasaki et al. (U.S. Patent No. 6,297,965). This rejection is respectfully traversed in its entirety.

Applicants respectfully submit that the Office Action fails to set forth a *prima facie* case of obviousness under Section 103. In particular, the proposed combination fails to teach or suggest "wherein the second circuit operates at current levels substantially lower than the first circuit" as recited in claim 1 of the present application. The Office Action conceded that the primary reference, Akiba, fails to teach this.

The Office Action took the position that Sasaki teaches this and cited column 1, line 63 though column 2, line 30 as support for this position. The cited portion of Sasaki states:

In the low EMI multi-layered circuit board shown in FIG. 3 which is described in JP-A-09(1997)-283974, a power source layer 162 and a first ground layer 163 form a capacity C1 interposing a dielectric layer 166, the power source layer 162 and a second ground layer 164 form a capacity C2 interposing a dielectric layer 167, and a resistor 165 is connected between the first ground layer 163 and the second ground layer 164.

In the circuit boards shown in FIGS. 1 to 3, all the circuit boards have a function for suppressing the variation of the power source voltage between the power source layer 162 and the first ground layer 163 both of which are a source of radiation. However, even if the power source layer and a part of the ground planar layer are so disposed that they are close to each other in the printed circuit board shown in FIG. 1, the increase of the electrostatic capacity obtained thereby is extremely small and the sufficient suppression of the power source voltage variation cannot be expected. In the circuit board 150 shown in FIG. 2, the polarities of voltages

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generated between the conductive patterns 154 and 153 and between the adjacent conductive patterns 155 and 156 are reversed to each other to have a function of implementing the radiation suppression by means of compensating the electric fields at the ends of the circuit board. Since, however, the voltage variation itself between the power source layer 151 and the ground layer 152 is unchanged, the unnecessary electromagnetic wave radiation from these layers 151 and 152 cannot be suppressed. While, in the multi-layered circuit board 161 shown in FIG. 3, the radiation of the unnecessary electromagnetic waves due to the voltage variation between the power source and the ground, and the malfunction of the device can be suppressed, the additional ground layer 164 and the second dielectric layer 167 are required in addition to the ordinary ground layer 163 to make its structure more complicated and to increase the cost.

As an initial matter, the cited portion of Sasaki makes no reference whatsoever to "current levels". The Office Action contains no explanation as to how anything in the cited portion of Sasaki otherwise teaches this. To the extent the Office Action is relying upon language such as "the variation of the power source voltage between the power source layer 162 and the first ground layer 163 both of which are a source of radiation", it is respectfully submitted that the Office Action fails to provide any explanation as to how such language teaches or suggests. "wherein the second circuit operates at current levels substantially lower than the first circuit" as recited in claim 1 of the present application and, as such, has failed to make out a *prima facie* case of obviousness under Section 103.

Moreover, it is respectfully submitted that one of ordinary skill in the art would not be motivated to make the proposed combination for the reason set forth in the Office Action. The Office Action took the position that it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the second circuit operating at current levels substantially lower than the first circuit as taught by Sasaki et al. employed in the device of Akiba et al. "in order to provide a radiation of the unnecessary electromagnetic wave due to the voltage variation between a power source and ground." It is respectfully submitted that nowhere in Sasaki is it taught or suggested that "provid[ing] a radiation of the unnecessary

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electromagnetic wave due to the voltage variation between a power source and ground" is desirable. Indeed, the Office Action itself concedes that the electromagnetic wave is "unnecessary." Also, Sasaki teaches away from such a combination (see, for example, the title of Sasaki: "WIRING ARRANGEMENT INCLUDING CAPACITORS FOR SUPPRESSING ELECTROMAGNETIC WAVE RADIATION FROM A PRINTED CIRCUIT BOARD" (emphasis added)).

Applicants respectfully request that this rejection of claim 1 be withdrawn for at least the reasons set forth above.

Claims 2-4, 6, and 11-13 all ultimately depend from claim 1 and, therefore, it is respectfully requested that the rejection of these claims be withdrawn for at least the reasons set forth above with respect to claim 1.

Claims 5, 16-17, and 22-24 are rejected under 35 U.S.C 103(a) as being unpatentable over Akiba et al. ("540) in view of Sasaki et al. ('965), and further in view of Hirashiro et al. (JP 406069680A, hereafter "JP"). This rejection is respectfully traversed in its entirety.

Claims 5 ultimately depends from claim 1 and, therefore, it is respectfully requested that the rejection of claim 5 be withdrawn for at least the reasons set forth above with respect to claim 1.

Claim 16 of the present application recites in part "wherein the control circuit operates at current levels substantially lower than the power loop."

The Office Action used the same reasoning set forth with respect to claim 1 in arguing that the cited combination teaches the noted language of claim 16.

Accordingly, it is respectfully submitted that the arguments set forth above with respect to claim 1 apply to claim 16 as well. Therefore, it is respectfully requested that the rejection of claim 16 be withdrawn.

Claims 17 and 22-24 ultimately depend from claim 16 and, therefore, it is respectfully requested that the rejection of these claims be withdrawn for at least the reasons set forth above with respect to claim 16.

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Title: ELECTRICAL NOISE PROTECTION**CONCLUSION**

Applicant respectfully submits that claims 1-6, 11-13, 16-17 and 22-24 are in condition for allowance and notification to that effect is earnestly requested. If necessary, please charge any additional fees or credit overpayments to Deposit Account No. 502432.

If the Examiner has any questions or concerns regarding this application, please contact the undersigned at 612-455-1681.

Respectfully submitted,

Date:

12-9-2005

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